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Handbook Nº 83417, G.

VICKERS 5 INCH AUTOMATIC GUN FOR AEROPLANES.

Vickers Limited, London.

VICKERS 5 INCH AUTOMATIC GUN

AEROPLANES.

Vickers Limited, London.

VICKERS 5 INCH H. V. AUTOMATIC GUN. (FOR AIR SERVICE)

PARTICULARS.

Calibre	·5 inch	$= 12.7 \mathrm{m/m}$.
Weight of Complete Round_	2.8 ozs.	=79 grammes.
Length of Cartridge	4·23 ins.	=107.5m/m.
Weight of Bullet	550 grains	= 35.64 grammes.
Muzzle Velocity	2550 f.s.	= 777 m.s.
Pressure	. 19 tons	= 2895 atmos.
Muzzle Energy	3:5 f.t.	=1.07 m.t.
Length of Barrel in Calibres.	_60	= 60.
Length of Recoil	1.25 ins.	-31·75 m/m.
Weight of Gun complete	.52 lbs.	= 23.6 kg.
Length of Gun	_45·0 ins.	=1143 ^m /m.
Rounds per Minute	400-600) = 400 - 600.
Force of Recoil	_370 lbs.	-167.8 kg.

VICKERS .5-INCH AUTOMATIC GUN

FOR AEROPLANES.

The Vickers .5-inch Aeroplane Gun is specially constructed for mounting on aeroplanes, and consequently has no water jacket, the barrel being supported by the side plates at the muzzle end which allow the passage of air to cool the barrel.

The gun is generally mounted and fixed in close proximity to the engine so that at high altitudes the danger of freezing the lubricant is minimised. It is arranged to point forwards to fire between the revolving propeller blades. This is accomplished by means of a special synchronising attachment, one part of which is secured to the front cover of the gun, and operating the handsear through a slot in the rear cover. The other part is operated by a gear on the engine or propeller boss, giving impulses to the handsear when the trigger on the "joy stick" is operated by the pilot. This synchronising gear is fully described in a special handbook.

The gun is rigidly mounted in the aeroplane, and no independent elevating or traversing movement is possible, so that the aeroplane itself must be manoeuvred till it is flying in the direction in which the gunner wishes to fire.

To simplify the operation of loading the gun whether after a stoppage or otherwise, a special loading handle is fitted to the gun. This allows the pilot to reload without the necessity of pulling the belt through the feed box. When the loading handle is operated it pivots on the special bracket bolted to the bottom plate, so that first the recess at the front of the handle raises the knob of the crank handle, withdrawing the lock and rotating the crank until the extractor is clear of the cams and is forced downwards by the cover guides. The central portion of the handle is meanwhile brought into contact with the boss of the crank handle which is thereby forced to the rear, drawing back the recoiling portions. These in turn actuate the feed block slide so that the feed pawls engage with a cartridge. At the end of the stroke the fuzee spring comes fully into action, carrying forward the recoiling portions and moving the cartridge in the feed block. When the handle is released the crank rotates, carrying the lock forward.

The gun is fitted with a crank retainer which is situated on the rear cover, by means of which the rate of fire can be varied from 300 to 700 rounds per minute.

A special disintegrating metallic belt can be used with Aeroplane Guns which is made up of steel links held together by the cartridges themselves so that on the belt passing through the feed box the links automatically fall into a receptacle one by one.

Note: - Since this gun is air cooled, it must be fired only in short bursts on the ground, time being allowed for cooling between the bursts.

VICKERS .5-INCH AUTOMATIC GUN. LIGHT MODEL FOR AEROPLANES.

General Description.

The gun may be considered as divided into two portions, the non-recoiling and the recoiling. It is worked automatically by two forces; the explosion of the charge, which forces the recoiling portion backwards, and a strong spring (called the fuzee spring) which carries it forward. The non-recoiling portion consists of the casing, and is attached to the aeroplane by joint pins.

Non-recoiling Portion.

Casing. - The casing consists of two outside plates and a bottom plate. It is closed at the top by the two covers, front and rear and at the back by the back block. The muzzle end of the casing is provided with a bearing which supports and guides the barrel.

The outside plates are riveted to the connecting block. In both plates are openings in which the crank bearings move, partly closed by a resistance piece; on the inside of both are cams which control the path of the extractor. On the outside of the right-hand plate are the following fittings.-

Roller and Dead-stop. A roller revolves on a stud on the resistance piece, and is retained there by a washer and a pin. The dead-stop is attached to a bracket on the right-hand outside plate, and is also secured by a washer and pin. On the outside of the left-hand plate is a stud for attaching the fuzee spring bracket.

Bottom Plate. The bottom plate is riveted to the outside plates and carries a bracket by which the gun is attached to the aeroplane.

Back Block. - The outside plates are connected at the rear end by the back block, being held together by a screwed pin which has a "T" shaped head to facilitate its removal. This pin is also used for assembling and dissembling the lock and for releasing the fuzee spring.

Feed Box. The feed box is of gunmetal and fits into a recess in the outside plates of the breech casing. It is provided with a slide to which is attached a pawl with spring for the purpose of moving the cartridges from right to left. The slide has a transverse motion given to it by means of a lever which has two arms, the top arm having a stud which engages in an opening in the slide and the lower arm a stud which engages in a recess in the barrel. The slide is by this means connected to the recoiling portion.

Retaining Pawl. - The feed box is also provided with two pawls which are connected by a finger piece and which engage

under the succeeding cartridge and prevent the belt slipping backwards during firing.

Cartridge Guide. - The feed box is provided with guides fitted above and below in the cartridge way and a spring at the front end to ensure the cartridges being in the correct position for being gripped by the extractor; they are prevented from being pushed too far through to the left by means of the cartridge and bullet stops which are inside the feed box.

Covers. - The front cover holds in position the feed block, and is provided with a catch and locking pin. This pin, has bearings provided in the outside plate, and is attached in such a way that it need never be removed from its bearings, and so there is no danger of losing it. The rear cover opens sideways to give the pilot easy access to the lock.

Attached to the inside of the rear cover and projecting downwards are the extractor guides, which, in conjunction with the cams on the side plates, control the path of the carrier. This cover also contains a groove in which the top part of the lock frame slides.

Cover Catch. - At the centre of the rear cover is a hinged plate with two hooks, known as the rear cover catch. This catch locks the rear cover to the right hand side plate.

Recoiling Portion.

The recoiling portion (which is mounted inside the non-recoiling portion) consists of the barrel and two recoil plates which carry the lock and the crank.

Barrel. - The barrel is formed with a square block at the breech end, and is provided with two trunnions (one at each side). By means of these trunnions the barrel is connected to the recoil plates. The barrel also has two recesses into which the bottom lever of the feed box engages.

Recoil Plates. The recoil plates are each provided with a hole to receive the barrel trumnions, and also guides in which the flanges of the lock move.

Orank Bearings. - The recoil plates each have a bearing through which the crank axis passes, thus connecting the latter with the barrel; these bearings move in slots in the breech casing.

Orank. - The crank is fitted on the right with a handle, the upper surface of which bears on the roller, and is of a special curved form; on the left it is fitted with a fuzee to which are attached two links. These links form the connection between the crank and the fuzee spring. The remainder of the crank is inside the breech casing.

Orank Retainer. - The crank retainer is situated at the rear and of the rear cover, so that on the return of the recoiling parts the crank is withheld until the barrel is nearly home, when it is released automatically. On the top is an

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adjusting screw which controls the rate of fire.

Connecting Rod. In the centre of the crank is a connecting rod which is free to turn on the crank pin.

Fuzee Spring. - On the left of the breech casing is a strong spiral spring called the fuzee spring, the rear end of which is connected (as before described) with the crank, and the fore end is attached to the breech casing by means of the fuzee spring bracket and adjusting screw.

The action of recoil compresses the fuzee spring and winds the links which are attached to it about the fuzee, so that when the crank handle is right back the fuzee spring is not only compressed by the recoil of the barrel, but the winding of the links on the fuzee causes a still further compression.

As soon as the recoil is exhausted, the action of the fuzee spring is to pull the recoiling portion into the firing position, and to unwind the links from the fuzee, thereby causing the crank handle to fly back and strike the deadstop, which is so constructed that when the crank handle reaches the stop it is prevented from rebounding.

Lock. The lock consists of the following parts. frame, side levers, extractor, firing pin, safety sear with spring, tumbler, tripping piece, extractor levers, hand sear, lockspring and lock-spring plate, also axis pin for side levers, tumbler, tripping piece, and hand sear. The axis of the safety sear is a part of the lock frame. The lock is attached to the connecting rod by a bayonet joint, and, when in firing position, closes the breech. In this position it is held by the side levers, the crank (which bears against guides on the recoil plates), and connecting rod. The lock has a reciprocating motion communicated to it by the rotation of the crank, and is kept in position during its backward and forward movements by means of flanges working in guides on the recoil plates and by the grooves underneath the cover.

Extractor. The extractor is attached to the fore end of the lock by guide ribs upon which it slides, and is fitted with gib, gib spring and shutter. The projections on the gib, together with the cartridge grooves, form recesses which retain the cartridge in position.

Extractor Safety Catch.—
The extractor safety catch is fitted on the right side plate just above the cam which prevents the extractor carrying the live round from running back into the cartridge in the feed box and causing an explosion in the feed box,

Side and Extractor Levers. - The extractor is moved upwards by means of side levers and extractor levers, and when in its highest position is retained there by the locking action of the levers, which ensures the hole for the firing pin being opposite the centre of the base of the cartridge when the lock is home.

The upward and downward movements of the extractor are regulated by guide ribs and stops; the upper and lower stops form part of the lock casing; the lower one regulates the drop of the extractor by limiting the travel of the extractor levers.

Ammunition Belt.- The gun is supplied with cartridges from a belt which passes through the feed box. The direction depends upon the position of the gun in the aeroplane. Generally the belt passes through from right to left. When it is desired a left-hand feed box is fitted to feed from left to right.

Action of Mechanism.

Action on Recoil. Suppose the gun to have just fired, the explosion causes the recoiling portion to move backwards through a distance of about one inch, causing the tail of the crank handle to press against the roller, thereby imparting a quick upward movement to the handle, thus rotating the crank (thereby drawing back the lock) and opening the breech. The travel of the recoiling portion to the rear also moves the actuating pawl in the feed box to the right, so as to engage behind a cartridge in the belt. When the lock moves backward the extractor extracts the empty case from the barrel, and withdraws a cartridge from the belt in the feed box. The extractor is kept in position by means of its horns, which move along the upper surface of the cams inside the breech casing until the cartridge is clear of the belt. When it reaches the rear end of these cams it falls, partly by its weight and partly by the action of the guides, thus bringing the cartridge, drawn from the feed box, in line with the barrel, and ejecting from the gun the empty case drawn from barrel.

Action of Fuzee Spring. - When the force of recoil is expended the action of the fuzee spring comes into play, carrying the recoiling portion forward and revolving the crank, after it has slipped past the crank retainer, by the unwinding of the fuzee links, thereby forcing the lock to the front. As the barrel travels forward it moves the actuating pawl on the feed box slide to the left, and thus brings up automatically a fresh cartridge into position in the feed box.

Forward Movement of Lock. - As the lock moves forward into the firing position, the live cartridge is placed in the barrel chamber. The extractor is moved upwards by the side levers acting on the lifting levers, thereby ejecting the empty case. During the rise of the extractor the projection on the gib slides over the live cartridge, which has been pushed into the barrel chamber, and engages with another cartridge in the feed box. At the end of the rise the firing pin hole in the extractor is in line with the cartridge in the barrel.

Final Movement of Lock .- The extractor reaches its highest

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position before the side levers have finished their travel, so that during the latter part of their movement their points press against the inclined surface of the bents on the extractor levers, thus giving an additional forward motion to the lock, and thereby tightening up all the joints in the breech mechanism and supporting it firmly against the breech at the instant of explosion.

Cocking Action. The turning of the crank handle to the rear not only draws the lock away from the barrel but also gives an upward motion to the connecting rod and rear end of the side levers, which latter, bearing on the tail end of the tumbler, rotate it on its axis, and the head of the tumbler being engaged with a projection on the firing pin, forces the latter to the rear, compressing the lock spring. When the bent of the firing pin has moved behind the bent of the tripping piece the latter is forced to engage with it by the action of the tripping piece spring, and it thus holds the firing pin in cocked position. The continued motion of the tumbler carries back the firing pin until the safety sear (which is below and is acted upon by the safety sear spring) is forced into the bent of the firing pin and retains it. The firing pin is thus prevented from flying forward by two actions, viz: that of the safety sear and that of the tripping piece.

Firing Action. - On the crank handle returning to the deadstop the lock moves to the front, the connecting rod and rear end of side levers have a downward motion, so that when the lock is in the forward position, the latter depresses the safety sear, thereby disengaging it from the firing pin, which then moves slightly forward till stopped by the bent of the tripping piece, engaging the bent of the firing pin. If now the upper end of the hand sear be moved rearwards by means of the plunger of the synchronising gear, the tripping piece is released and the firing pin propelled forward by the lock main spring on to the cap and explodes the cartridge.

General Instructions.

Experience has shown that during ordinary firing the piece most susceptible to wear is the firing pin.

If during a prolonged firing, a part, such as the lock, becomes worn or damaged, it should be removed and replaced by the spare lock, an operation which only takes a few seconds. If, however, the lock is subsequently made fit for use by replacing the part worn out by a new part taken from the set of spare parts, it should be put back into use and the spare lock (if still in good condition) should be returned to the spare part box.

To Remove and Replace the Lock. To remove the lock, open the rear cover, turn the crank handle as far to the back as possible, and see that the extractor drops, then take hold of the upper extractor stop and raise the lock, allowing the crank handle to return slowly back; then, if there are any live cartridges in the extractor, remove them (while the latter is down); now seize the lock in front, give it onesixth of a turn to either side, and lift it out.

When the lock is out of the gun, and it is necessary to release the lock spring, great care should be taken before doing so to see that the extractor is at the highest point. The firing pin hole will then be in line with the firing pin.

To replace the lock, see that the connecting red is held upright by the spring on the crank, then giving the lock one-sixth of a turn to either side, slip the rear end of the side levers over the end of the connecting rod as far as it will go, turn the lock to the front and lower it into the breech casing while turning the crank handle over to the rear; see that the lock flanges are engaging in their guides in the recoil plates, and let go the crank handle.

To Remove and Replace Feed Box. To remove the feed box, open the front cover; the feed box can then be lifted out by pulling it vertically upwards.

To replace the feed box, open the front cover, and force the feed box down into position, taking care that the feed box slide is well over to the left, so that the stud on the lower arm of the lever engages in the recess on the right of the barrel.

To Remove Fuzee Spring and Bracket. To remove the fuzee spring and bracket take out pin securing handle block and after giving crank handle a partial turn insert handle of the pin in hole in fuzee spring case. Upon releasing the crank handle the spring, etc. will free itself.

To replace the fuzee spring and bracket, reverse the foregoing operations.

To Keep the Gun in Working Order. - Before taking a gun into action, the surfaces on which all movable parts work should be thoroughly well oiled, with anti-freezing oil, especially the following. -

- (a) Bearing parts of barrel and all recoiling portions.
- (b) The lock guides on the recoil plates, also the working parts of the lock itself. These include the internal components which can be lubricated through the opening on the upper surface of the lock casing, and, in addition, the external parts, such as the levers and extractor.
- (c) Faces of feed box and the edges of the cartridge guides inside the feed box.
- (d) Bearings of the crank as far as they can be reached without stripping the gun.

Testing Friction of Recoiling Portion. In order to see that the recoiling portion works freely, remove the fuzee spring bracket, take out the lock, turn the crank handle upwards, take hold of it with the right hand and the fuzee with the left, slide the recoiling portion backwards and

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forwards to see that it moves easily and also that the barrel goes right home.

Testing Weight of Fuzee Spring as Measured on the Crank Handle. Weigh the fuzee spring with the spring balance, proceeding as follows. First open the rear cover and remove the lock, then place loop of spring balance upon the knob of crank handle and pull vertically upwards; the reading indicated when the crank handle COMMENCES to move should be between 12 and 16 lbs.

Points before Firing .-

- (a) Examine the barrel and see that the bore is clear. This can be easily done by removing the lock and looking through the bore after the handle block has been turned downwards for the purpose.
- (b) See that the spare lock is close at hand in case of need.
- (c) Examine the ammunition and see that it is of the proper description, that the belts are correctly filled with it, and packed carefully in the ammunition belt boxes, the bullets pointing towards the muzzle.

Points to be attended to during Firing .-

- (a) That the hand is kept clear of the crank handle to avoid risk of injury.
- (b) That the belt is on no account to be pulled when the gun is firing.
- (c) See that the belts are refilled without delay and the boxes replaced.

Points to be attended to after Firing .-

- (a) That the gun is unloaded.
- (b) That the barrel is cleaned out and oiled immediately after firing to prevent erosion.
- (c) That the lock spring is released.
- (d) That in collecting the empty cases there are no live cartridges amongst them.
- (e) That the lock is taken out, and the extractor, firing pin, and springs are examined to see that they are not damaged.
- (N.B.- It will not be necessary to strip the lock for this).

To Strip and Assemble the Gun.

To Strip the Gun .- Press front cover catch knob, open front

cover, and lift out feed box.

Open rear cover and remove lock.

Release fuzee spring bracket as described, disconnect the fuzee spring from the fuzee and remove fuzee from crank.

Turn down the back block.

Pull out Resistance Piece.

Remove Flash Eliminator.

Draw out the barrel and recoil plates from the rear.

Unscrew the nuts of the cover axis pins, withdraw these pins and remove the front cover, withdraw axis pins of the rear cover and remove rear cover.

Unscrew and withdraw the axis pin of the catch of the rear cover, remove this catch.

Unscrew and remove the axis pin of the back block and remove back block.

Withdraw the split pin from the roller collar and remove collar; also withdraw the split pin from the dead-stop washer and remove dead-stop.

To Assemble the Gun. - Reverse the foregoing operations.

To Strip the Feed Box. - Take out the securing pin of the feed box levers and remove top and bottom levers.

Remove feed box slide, pull off the actuating pawl and remove actuating pawl springs.

Unscrew axis pins for retaining pawls and then take out retaining pawls and spring.

To Assemble the Feed Box .- Reverse the foregoing operations

To Strip the Lock. - Remove the lock from the gun, and, with the "T" pin from the back block, press out the side lever axis spring pin and sheath; remove the side levers, lifting levers, and slide off the extractor.

Press the safety sear down, press the handsear to the rear and the firing pin flies forward; then press out the tumbler axis pin and remove tumbler. Press out handsear and tripping piece axis pins, and remove handsear and spring with tripping piece and spring. Remove firing pin spring locking plate, and firing pin spring, press the safety sear down and shake out the firing pin, then raise the safety sear, unhock and remove same. Push out the gib shutter on the extractor and remove the gib spring and the gib.

To Assemble the Lock. Insert the gib and its spring in the extractor and slide on the gib shutter. Slide the extractor on to the lock frame, insert the safety sear and the

firing pin, place the handsear and tripping piece with their axis pins, replace the tumbler and lifting levers with axis pin, ease the firing pin right forward, insert the firing pin spring, and secure by the locking plate, put on the side levers and secure them with axis pin sheath and spring pin.

The Care and Preservation of Vickers Machine Guns.

It is very important that the bore and chamber should be oiled immediately after firing to prevent erosion.

Oil to be used for Lubrication.— When cleaning the gun, turpentine or oil is to be used; on no account may emery cloth or any cutting substance be allowed. It is a good plan before assembling the gun to try the parts in their place separately to see that they work freely.

Examination of Components after Practice. The following course should be pursued after practice. The locks should be taken out, the extractors, firing pins, and springs should be examined to ascertain that they are all correct. It will not be necessary to strip the lock for this.

Monthly Examination. - Every machine gun should be thoroughly examined every month and left in a properly lubricated and serviceable condition.

The following parts should therefore be removed, properly cleaned, and re-oiled or greased.-

Lock, feed box, fuzee, spring bracket and spring, back block, resistance piece, dead-stop, packings, barrel and recoil plates.

(N.B.- It will not be necessary to strip any of these parts).

Object of Spare Lock. The spare lock is provided to readily replace the one in the gun in the event of a broken spring or pin point. The exchange of locks can be so readily effected that the gun is only a moment out of action.

Failures that may occur and how to remedy them.

The following system is based on the fact that the Vickers Automatic Gun has the advantage of having all its mechanism in two principal components, namely, the feed box and the lock.

The feed box can be cleared readily in the event of a stoppage, but should the fault lie with the lock it is so easy to remove and replace with the spare one that this is the usual course to adopt.

When a stoppage occurs it is only necessary to know which of the two named parts is responsible and to act as suggested. Stoppages during firing may be classed under two headings.

(1) Temporary - which are due to

- (a) Failure in the lock or faulty ammunition.
- (b) Some cause which can generally be avoided by a high standard of training and a thorough knowledge of the gun by the pilot.
- (2) Prolonged which are due to failure to some part which cannot be put right in the air, and which necessarily put the gun out of action for a more or less prolonged period.

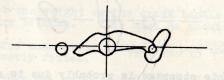


Diagram 1 shows the crank handle with the lock in the home position, and if the gun stops in this position, indicates.

- 1. (a) Missfire.
 - (b) Empty barrel.
 - (c) Broken firing pin or main spring.
 - (d) Defective ammunition.

To remedy, use the loading handle to function the gun; by this action the defective cartridge, if any, is ejected, and a fresh one put into the chamber.

If this fails, the lock should be removed and replaced by the spare one.

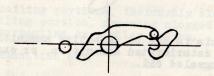


Diagram 2 shows the crank handle with the lock nearly in the home position and indicates that the extractor is unable to rise to its highest position owing to a light fuzee spring, want of oil, or faulty feed.

2. To remedy, strike down sharply on the crank handle with a glancing blow to prevent injuring hand. If this fails, raise the crank handle slowly until the horns of the extractor are retained by the recess in the cams. The feed box should then be examined and the belt pushed into line. Allow crank handle to go forward and fire.

If both fail, examine feed box. The probable cause of the failure is due to a badly filled belt preventing the cartridge from passing freely through the feed box or it may be due to faulty use of the loading handle.

To clear, lift the feed pawls and adjust the belt,

pulling out until the first round is held by the retaining

Full the loading handle fully back and let go.

If this fails it is possible that a broken gib or apring is the cause. In this case the lock must be removed and replaced by spare one.

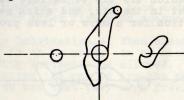


Diagram 3. This stoppage is probably due to a separated case. The front portion of the case is telescoped on to the next cartridge in the chamber.

To clear raise rear cover, draw back crank handle and holding up lock, push out cartridge from the extractor by butt end of clearing plug, close rear cover, release crank handle. Reload with the loading handle.

If the separated case remains in the chamber the clearing plug must be used.

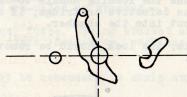


Diagram 4. This is due to defective ammunition, such as weak charge or deteriorated ammunition, or excessive friction due to congealed oil.

To clear after a stoppage, pull back the crank handle on to the roller and let go. If failure recurs repeat until gun is warmed up.

It is obvious that to clear stoppage in the air the gunner pilot must be thoroughly trained in the mechanism of the gun and the causes of the various stoppages. In order to minimise the causes of stoppage the ammunition should be carefully tested, and only correct rounds should be filled into the belts.

The following would cause prolonged stoppages .-

1. Broken fuzee or fuzee spring.

In this event the firer would be compelled to break off the fight.

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Points to be Observed before, during, and after a Flight.

- (1) See that the barrel is clean and dry.
- (2) Oil the frictional parts lightly with a non-freezing lubricant in winter and a mixture of this with porpoise oil in summer.
- (3) Check the weight on the crank handle with the spring balance. This must be about 12 lbs.
- (4) Examine ammunition chutes and box and see they are correctly fitted.
- (5) See that the belts are correctly prepared and placed correctly in the ammunition box.
- (6) See that the sight is correctly harmonised with the gun.
- (7) Verify that the loading handle is correctly fitted and not hindering the crank handle.
- (8) See that the clearing plug and spare lock are handy.
- (9) See that the gun is ready loaded, and, if possible, fire a few rounds before commencing a flight.

AFTER FLIGHT. See that the gun is unloaded.

Remove recoiling portions, thoroughly clean and re-oil. Clean non-recoiling portion, removing clogged oil by means of spirits of turpentine or similar medium. Then re-oil.

Re-fill ammunition box.

Examine chutes.

Examine sight.

Any defects which have been noted during flight should be immediately remedied.

VICKERS . 5-INCH AUTOMATIC GUN.

NOMENCLATURE.

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Lock Frame
      Safety Sear Axis Pin
      Safety Sear
     Tripping piece
"Spring
"Axis Pin
     Handsear
Spring
Axis Pin
      Tumbler
11
13
     Spring

" Locking Plate
Extractor
16
      Gib
      " Spring Plate
18
19
      Lifting Lever R.H.
20
21
22
        lde Lever
" Axis Spring Pin
" " Sheath
      Connecting Rod " Adjusting Nut
26
27
      Crank
       rank
Pin
Fixing Pin
28
29
        Handle
Knob
Securing Screw
30
       " Links
35
            Spring
                   Tension Screw Vice Handle
36
              Rod
Head
Case
Front End
Rear End
38
39
40
42
              Bracket Securing Stud
43
      Recoil Plate R.H.
            " L.H.
47
      Barrel
      Cannelure for Asbestos Packing
47A
      Asbestos String
47B
      Feed Box R.H.
            " Slide
        " Slide
" Lever (Upper)
" Actuating Pawl
                            " Spring
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Feed Box Bullet Guide Spring
          " Retaining Pawls
" Axis Pins
" " Spring
                                " Spring
              Bottom Lever
           " Pin Retaining Levers
        Back Block
        Back Block

" Hinge Pin

" " Nut with Split Pin

" "T" Securing Pin
  63
        Rear Cover
          " " Catch
                " Axis Pin
" Spring
  67
          * Hinge Pins with Washers and Split Pins
        Crank Retainer Bracket
                  " Spring
        " Axis Pin
" " and Adjusting Screw Nut
" " Adjusting Screw
Front Cover
             " Catch
" " Bracket"
" " Knob
" " Spring
 79
        " " Hinge Pin " with Split Pin
        Outside Plate R.H.
                   " " Side Cam
        Resistance Piece
       Roller
" Washer
" " Split Pin
Deadstop
" Bracket
" Washer
" " Split Pin
        Roller
 87
       Extractor Safety Catch Bracket

" " Plunger

" " " Spring

" Cap
 94
        Outside Plate L.H. Side Cam
 97
 98
        Bottom Plate
        Connecting Block
 99
       Barrel Support

Gland

Gland

Locking Plate

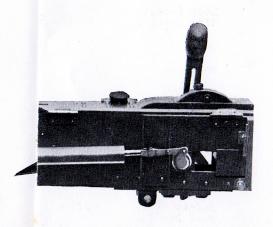
Screw
        Trunnion Distance Piece
100
101
103
104
105
          " Locking Nut
106
107
       Adjusting Washer No.1
108
            PARTS SPECIAL FOR LEFT HAND FEED BOX.
       Feed Box L.H.
        " Slide
" Lever Upper
" Actuating Pawl
" Retaining Pawls
" " Spring
111
112
```

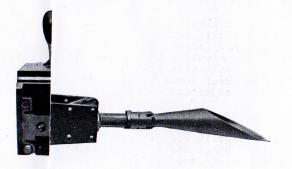
NOMENCLATURE.

Part No. in	and Roots Roots Oc
nomenclature	Name of Part.
a 2114.0.1	ing with the soul
1 - 24	Lock (complete)
24	Side Lever Axis Pin Sheath
23	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
11	Tumbler
12	" Axis Pin
8	Handsear
10	" Axis Pin
5	Tripping Piece
7	" Axis Pin
13	Firing Pin
14	Main Spring
9	Handsear Spring
6	
The state of the s	Traffiche Traffiche
10 2019	Aptel " Brien
17	Gib registration in the second
18	" Spring
19	DHUCOOL
3 & 4	Safety Sear with Spring
48 to 59	Feed Box (R.H.)
110 to 115)	
52 to 54)	" (L.H.)
56 to 59)	
33 & 34	Fuzee with Chain
63	Pin securing Handle Block
78	Front Cover Catch, Knob
79	" Spring
85	Roller
87	Split Pin securing Roller Washer
86	Roller Washer
53	Actuating Pawl Springs, R.H. and L.H.
57	Retaining Pawl Spring
67	Rear Cover Catch Spring
108	Adjusting Washer No.1
109	" " " " " " " " " " " " " " " " " " "
32	Screw securing Retaining Pawls and Crank Handle
91	Split Pin securing Dead Stop Washer
35	Fuzee Spring (Compression Type)
47B	Asbestos String
47	Barrel
122	End Strip for Belt
123	Strip for Belt
	Froi of Tong
123A	Eyelet Long) for Belt
123B	DHO107
124	Cleaning Rod
125	Clearing Plug
126	Punch No.5
127	Punch for Lock
128	" Actuating Pawls
129	Combination Tool
130	Tin Box (large) for Spare Parts
131	Belt Filler
121 & 120	Ammunition Box (100 rounds) with belt
132	Spare Part and Tool Box
133	Loading Handle with Bracket and Bolts
100	HOURTHS HUMATA MIAN PLOOPER OUT DOING

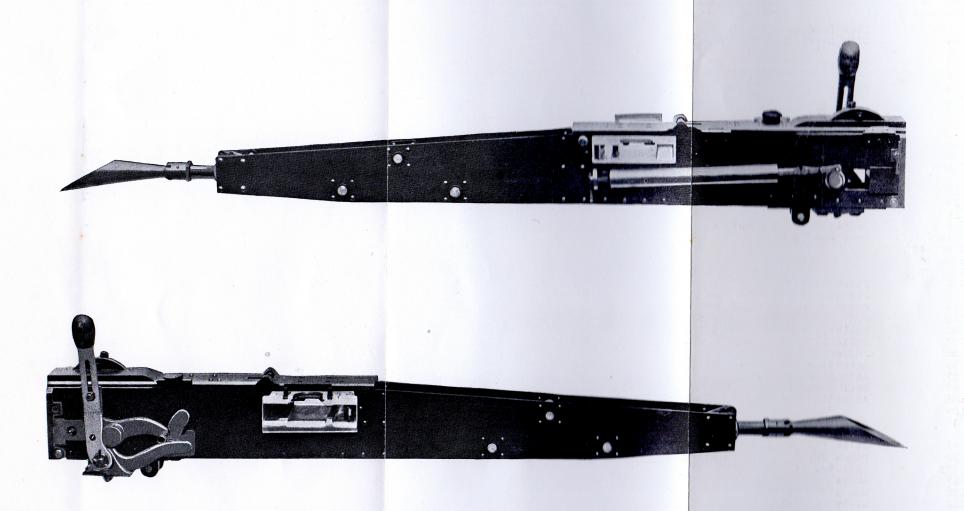
JN.

Plate I.





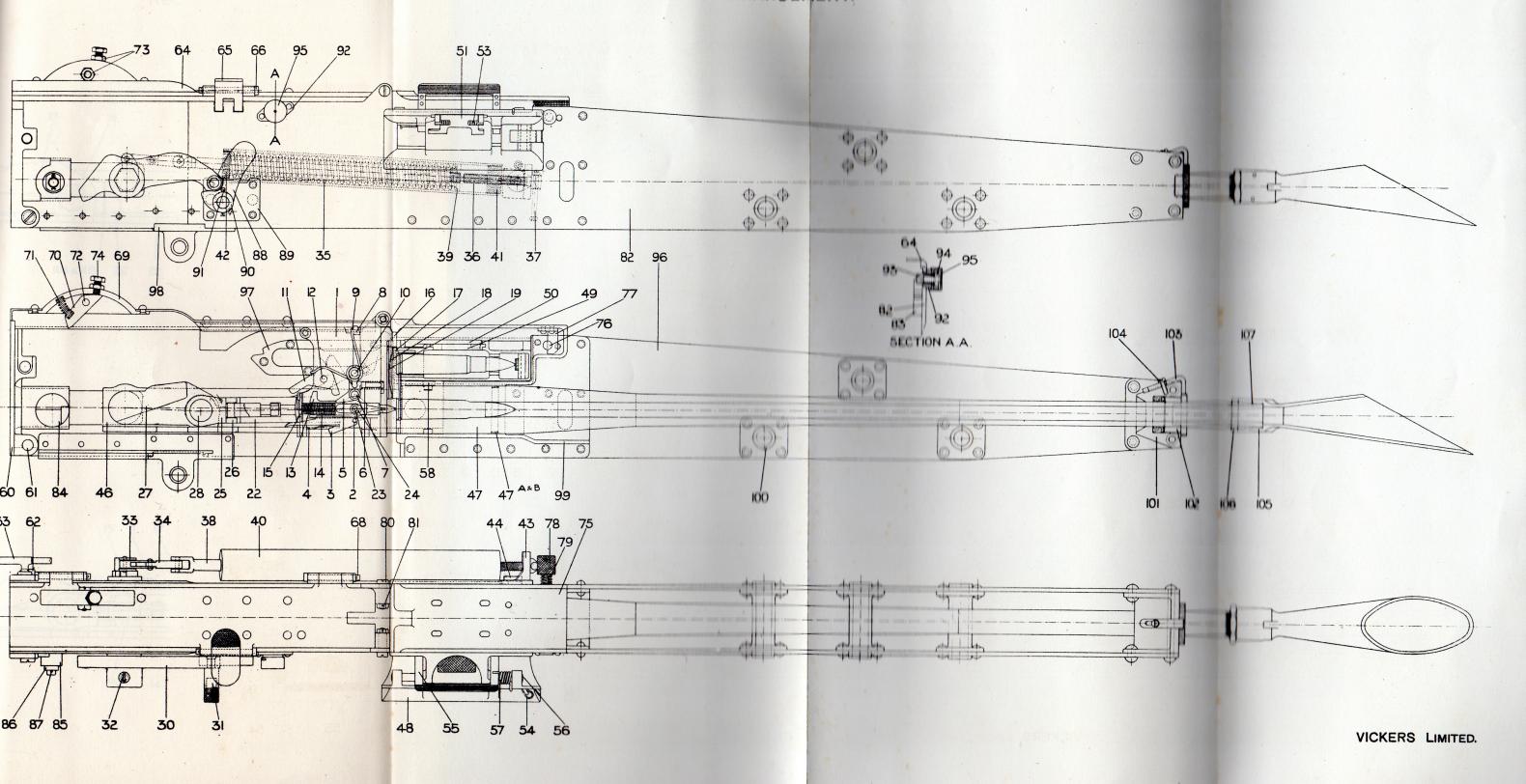
VICKERS LIMITED.



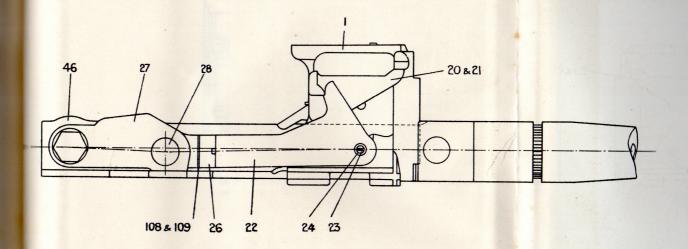
VICKERS LIMITED.

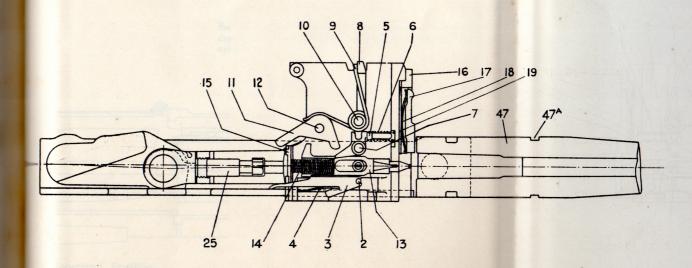
VICKERS .5 INCH AUTOMATIC GUN.

GENERAL ARRANGEMENT.



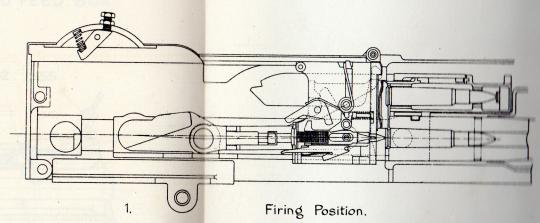
RECOILING MECHANISM.



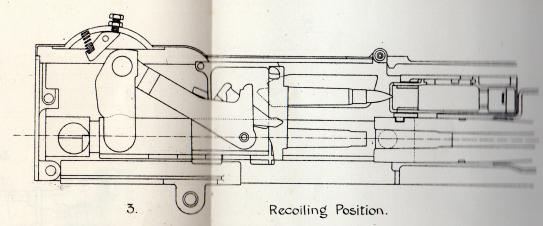


VICKERS . 5 INCH AUTOMATIC GUN.

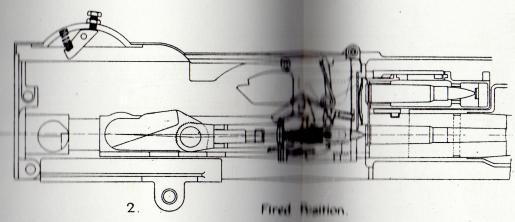
ACTION OF MECHANISM.



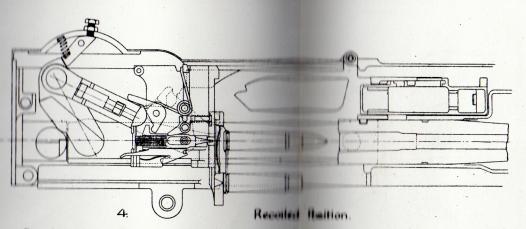
Lock, barrel and recoil plates fully home. Firing pin cocked on to handsear and extractor engaging with two live cartridges, one in the barrel and one in the feed box.



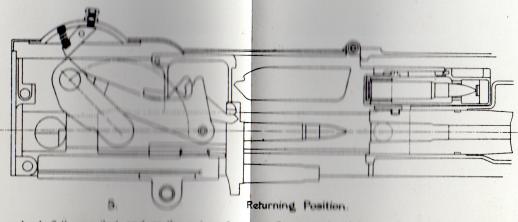
Barrel and lock partly recoiled, cocking the firing pin, and extracting the live curtilitie hum the feed box, and the empty case from the barrel.



Lock barrel and recoil plates fully home, firing professed and the extractor engaging with a live cartridge in the feed box and with empty are in the barrel.

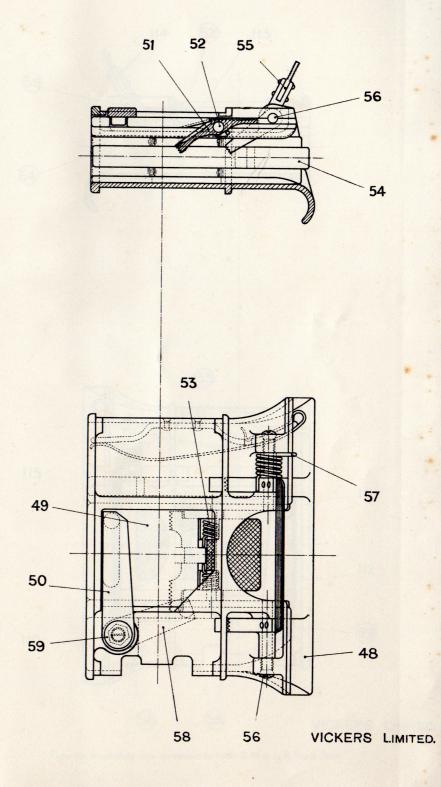


Barrel and lock fully recoiled, barrel on the point of attending with crank being held back by crank retainer. Extractor with live round at the local position and empty case in line for ejectment.

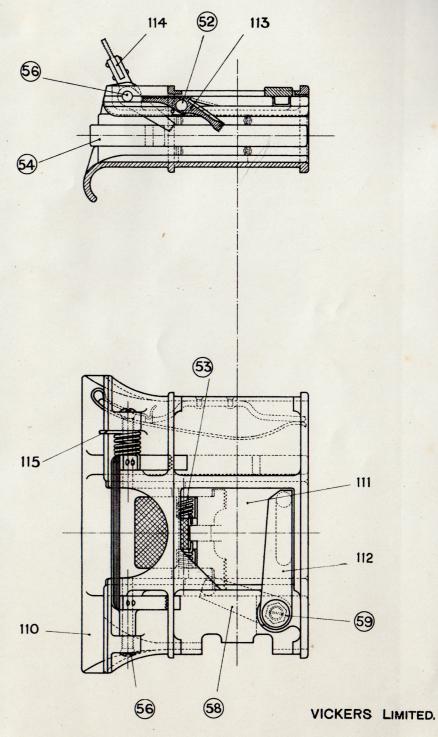


Lock fully recoiled and on the point of release from crank retainer. Barrel and recoil plates fully returned and new cartridge brought into feed box. Firing pin cocked on to safety seer: Extractor in dropped position bringing live cartridge in line with the chamber of the barrel.

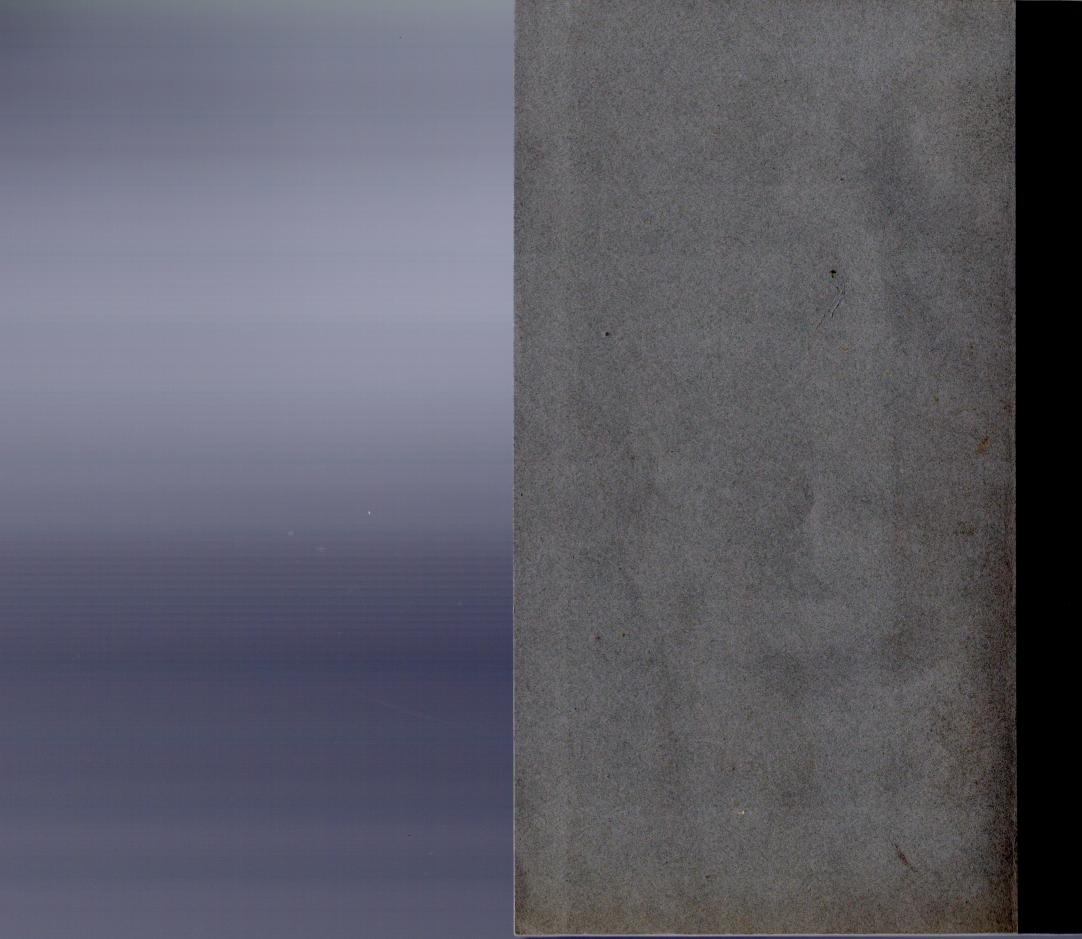
VICKERS .5 INCH AUTOMATIC GUN. RIGHT HAND FEED BOX.



VICKERS .5 INCH AUTOMATIC GUN. LEFT HAND FEED BOX.



Figures in circles are common to both R.H. & L.H. Feed Box.





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